

CLAIMS

Sub C1 1. A plasma-resistant member of the type which is employed in a reaction chamber of a plasma treating apparatus, characterized in that said member is formed of a dense alumina sintered product having an average grain size of 18 - 45 μm , a surface roughness Ra of 0.8 - 3.0 μm , and a bulk density of 3.90 g/cm³ or over.

2. A plasma-resistant member as defined in Claim 1, characterized in that said dense alumina sintered product has a purity of 99.8% or over, an Si content of 200 ppm or below, and an alkali metal content of 100 ppm or below.

3. A plasma treating apparatus comprising an electrode insulating member for electric insulation between at least one of an upper electrode and a lower electrode and a reaction chamber, a clamp ring urging a peripheral portion of a treating surface of a body to be treated against the lower electrode to hold the surface thereat, a focus ring provided in the vicinity of the upper electrode or lower electrode for effectively transmitting reactive ions to the treating surface of the body to be treated, and a covering member provided to cover the inner walls of the reaction chamber therewith, wherein at least one of said electrode insulating member, said clamp ring, said focus ring and said covering member is constituted of the plasma-resistant member defined in Claim 1 or 2.

A 4. A plasma treating apparatus comprising an electrode insulating member for insulation between an upper electrode and a reaction chamber,

an electrostatic chuck for electrostatically attracting and holding a body to be treated by application of a high voltage to an electric conductor member thereof, a focus ring provided in the vicinity of the upper electrode or lower electrode for effectively transmitting reactive ions toward the treating surface of said body to be treated, and a covering member for covering the inner walls of the reaction chamber, wherein at least one of said electrode insulating member, said electrostatic chuck, said focus ring and said covering member is constituted of the plasma-resistant member defined in Claim 1 ~~or 2~~.

5. A plasma treating apparatus comprising an electrode insulating member for insulation between at least one of an upper electrode and a lower electrode and a reaction chamber, an electrostatic chuck for electrostatically attracting and holding a body to be treated by application of a high voltage to an electric conductor member thereof, a focus ring provided in the vicinity of the upper electrode or lower electrode for effectively transmitting reactive ions toward the treating surface of said body to be treated, a covering member for covering the inner walls of the reaction chamber, and a cover body for covering a peripheral portion of the treating surface of said body to be treated in a non-contact fashion, wherein at least one of said electrode insulating member, said electrostatic chuck, said focus ring, said covering member and said cover body is constituted of the plasma-resistant member defined in Claim 1 ~~or 2~~.